**ABSTRACT**

T helper type 2 (T₄₂) cells are critical for clearance of parasitic helminth infections. Their coordinated efforts harness cellular and molecular pathways to expel worms, resolve intestinal inflammation and drive tissue repair. Yet the mechanisms that control T₄₂ cell activation, differentiation, and maintenance remain unknown. We recently demonstrated that Leucine rich repeat and Ig domain containing 2 (LINGO2) can function as a receptor for the mucosal reparative cytokine Tregulin factor 3 to limit epithelial damage, collits and immunopathology. Because LINGO2 is broadly expressed in both hematopoietic and non-hematopoietic cell lineages, this study specifically addressed whether LINGO2 expression in the T cell compartment served a biologically important function in host protection against the parasitic helminth Trichuris muris. Data show that LINGO2 is upregulated in activated T cells and mice selectively deficient for LINGO2 in T lymphocytes (CD4Cre LINGO2flo/flo) had significantly higher numbers of adult worms in the peritoneum, parasitic eggs in the stool and colon immunopathology compared to CD4Cre or LINGO2lox/lox controls. Intriguingly, after Trichuris infection, CD4Cre LINGO2flo/flo mice had significantly fewer GATA3+ and IL4-T₄₂ cells in the mesenteric lymph node but significantly increased interferon gamma levels. Taken together, this work highlights a previously unrecognized cell-intrinsic role for LINGO2 in controlling T cell responses that critically shapes the outcome of helminth infection.

**RESULTS**

Mice selectively deficient in LINGO2 in CD4+ T cells are unable to clear Trichuris muris infection compared to controls.

- CD4⁺ T cells from the MLN of selectively LINGO2 deficient mice inappropriate express IFN-γ at 21 dp infection compared to controls. Blockade of IFN-γ promotes worm clearance.

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